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INTRODUCTION

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H. BROOKES

ASSISTANT EDITOR

1

[Rapid determination and contents of maltol and ethyl maltol in foods and drinks.]
Zappavigna, R.; Brambati, E.; Bonino, F.
Latte June, 843-846 (1974) [44 ref. It] [Istituto di Ind. Agrarie, Univ. di Milano, Italy]

A rapid TLC method for estimating maltol and ethyl maltol is described. The results of the TLC method were confirmed by GLC. Ethyl maltol was not detected in any of the samples analysed. Maltol was not detected in fruit juices or condensed or sterilized milk; it was detected at <1 ppm in dried milk and at 1-20 ppm of roller-dried whey. Contents in other commodities were 40-80 ppm in dark beer, <1 ppm in clear beer, 10 ppm in malt extract, 40-60 ppm in marsala, <1 to 20 ppm in biscuits, and 0-80 ppm in chocolate and coffee substitutes. JMD

2

[Refuting the formation of N-nitrosamines by the Maillard reaction.]
Kawabata, T.; Shazuki, H.
Journal of Food Science and Technology [Nihon Shokuhin Kogyo Gakkai-shi] **19** (6) 241-248 (1972) [7 ref. Ja, en] [Nat. Inst. of Health, Shinagawa, Tokyo, Japan]

Products or reaction of DL-alanine with D-glucose (pH 9.0, 100°C, 2 h) were analysed by GLC by use of (i) Chromosorb 101, (ii) Chromosorb W-20% Carbowax 1540-KOH, (iii) Chromosorb W-20% Carbowax 1540, or (iv) Chromosorb W-20% Versamide 900 column. A substance with retention time equal to that of dimethylnitrosamine was found in reaction products by use of (i) or (ii), but not by use of (iii) or (iv). In the former case, pyrazine or its derivative had the same retention time as dimethylnitrosamine. The other nitrosamines, i.e. dimethylnitrosamine, di-n-propylnitrosamine, di-n-butylnitrosamine, di-isobutylnitrosamine, and N-nitrosopyrrolidine were developed by TLC using a 2 solvent system, but none of these had R_f identical to those of any of the reaction products. GLC-MS showed the presence of pyrazine and absence of dimethylnitrosamine. The Maillard reactions of other amino acids with other sugars and ascorbic acid were carried out at different pH values. Dimethylnitrosamine was never found in any combinations examined. Brown coloured foods, soy sauce, miso, toasted bread, coffee, biscuit and chocolate were examined, but dimethylnitrosamine was never found; the test could detect 1 part/billion of dimethylnitrosamine. SKa

3

World coffee production low for 1973-74.
Anon.
Kenya Coffee **39** (459) 170-178 (1974) [En]

Estimated world total and exportable production of green coffee in 1973-1974 is discussed. Total production is expected to be 64.3 million bags of 132-276 lb each (-16%), exportable production 44.7 million bags (-22%). Total and exportable production in specified countries, value of exports, US imports by country of origin, US gross imports by months and US gross imports by country or area of origin are tabulated for various periods between 1963 and 1974. RM

4

Roasted coffee pack.
Schmidt, E. (Jacobs (Joh.) & Co.)
Canadian Patent 952 486 (1974) [En]

A pack for ground, roasted coffee is provided with filter paper, the coffee and filter paper being separated by a water-permeable parting layer through which the ground roasted coffee cannot pass. IFT

5

[Long-term storage of coffee and the quality of the final beverage.]
Padaryan, E. N.; Fedotova, T. T.; Loginova, N. M.
Konservnaya i Ovoshchesushil'naya Promyshlennost' No. 3, 19-22 (1974) [Ru] [Moskovskii Ordena Lenina Pishchevoi-Kombinat, USSR]

Long-term storage (4-10 yr) of the following raw coffees was tested: Santos 4 (Brazil), Plantation A and B (India), Harrar (Ethiopia), Arabica (Tanzania) and Robusta (India, Uganda, Cameroons). Coffee originally contained 8.27-10.2% sugar (DM basis); after 5 yr the decrease was 10%. Protein content was 16.73-21.62%; due to low protease activity, there was no decrease during storage. Caffeine showed no signs of decomposition after 5 yr. Arabica contained 1.2-1.6% caffeine, Robusta 1.9-2.4%; about 85% of the caffeine passed into the drink. Acidity of coffee was 2.4-3.3°, and in 5 yr increased by 0.7°, mainly in grains infected by microorganisms and damaged by fat decomposition due to lipases. Arabica contained 11.5-18.0% fat, Robusta 9.2-13.4%; unsaturated fatty acids accounted for 50.1-59.9% of the total fatty acid content. Coffee phenolic substances act as antioxidants; over 5 yr, the fat acid number increased by a max. of 75-80%. Raw coffee contained 7.6-11.3% tannins and 7.4-11.1% chlorogenic acid. Robusta contained 5-6% more phenolic compounds than Arabica; the effect on taste and aroma of the drink is pronounced. During 5 yr of storage, chlorogenic acid decreased by 5-8% and tannins by 10-20%. Storage characteristics of the different coffees and the effect on beverage quality are summarized. STI

6

A method of producing a soluble, pulverized, cereal coffee.
Poland. Centralne Laboratorium Przemyslu

Koncentratow Spozywczych
British Patent 1 356 041 (1974) [En]
Roasted, cereal grain material containing a macro-molecular substance is subjected to extraction with water containing an enzyme to effect degradation of the macro-molecular substance. The grain material includes chicory roots. The liquid extract is spray-dried. IFT

7

[Method for producing a flowable concentrate of milk-containing coffee.]
Burns, S. M.; Jeffrey, W. P. (Unilever NV)
Netherlands Patent Application 7 315 115 (1974) [Nl]
A milk-coffee concentrate containing preferably 8% coffee solids, 5-15% fat, 12-25% skim-milk solids and optionally <25% sugar, may be prepared from liquid coffee extract, cream, dried skim-milk and water. The composition contains preferably <45% solid matter. The product is sufficiently stable after pasteurizing at 65°C and packaging while hot. W&Co

8

Coffee processing - a major new industry in the Ivory Coast.
Fadiga, A.
Tea and Coffee Trade Journal **146** (8) 18-19 (1974) [En]
The coffee processing industry in the Ivory Coast is surveyed. Two sectors of the industry are green coffee processing which handles 250 000-300 000 t/yr, and torrefaction which utilized 7505 t green coffee in 1973 for roasted and instant coffee. Production of soluble coffee in 1973 was 2200 t, i.e. 6600 t green coffee. RM

9

[Coffee export and imports by the Federal Republic of Germany in December 1973 and for the 12 months of 1973.] Kaffee-Aussenhandel der Bundesrepublik im Dezember und in den 12 Monaten 1973.
Anon.
Kaffee und Tee Markt **24** (9) 8 (1974) [De]
Data are given for exports and imports of (i) non-roasted non-decaffeinated coffee, (ii) non-roasted decaffeinated coffee and (iii) roasted non-decaffeinated coffee by the Federal Republic of Germany in 1973. Total values for imports were (t): (i) 340 052.2 (main sources of supply Colombia, Brazil and El Salvador); (ii) 2131.3 (main source of supply France) and (iii) 1200.3 (main sources of supply the Netherlands and Italy). Total values for exports were (t): (i) 4125.9; (ii) 4851.4; and (iii) 2595.0 AJDW

10

[Possibilities of product classification by sieving and sifting.] Möglichkeiten der Produktklassifizierung durch Sieben und Sichten.
Dlugosch, L.
Kaffee und Tee Markt **24** (4) 3-5 (1974) [De]
The operating characteristics and applications of various types of equipment (sifters, sieving machines, combined sifter/sieve units, air separators) for separation of impurities (dust, stones etc.) or agglomerates from tea or coffee are briefly discussed. AJDW

11

Caffeine distribution in C. acuminata, T. cacao and C. arabica.
Somorin, O.
Journal of Food Science **39** (5) 1055-1056 (1974) [15 ref. En] [Chem. Dept., Univ. of Lagos, Nigeria]
The purpose of this investigation was to determine concn. of caffeine in bark, beans, leaves, roots and pods of C. acuminata, C. arabica and T. cacao. Results showed that kola nuts, coffee beans and cocoa beans are the main sites of caffeine storage in C. acuminata, C. arabica and T. cacao, respectively. The leaves of C. acuminata, C. arabica and T. cacao, and pods of C. acuminata and T. cacao may contain traces of caffeine. IFT

12

[The content of polyaromatic hydrocarbon carcinogens in various coffee types.]
Soos, K.; Fözy, I.
Edesipar **25** (1) 7-10; (2) 37-40; (3) 65-69 (1974) [34 ref. Hu]
A special procedure was developed for the determination of polyaromatic hydrocarbons. The benzene extract is evaporated, dissolved in iso-octane, and the lipids removed by shaking with a mixture of dimethylsulphoxide and phosphoric acid. The separated part is diluted with water, transferred into iso-octane, purified on an activated Florisil column and the components separated by TLC. The single bands are examined by UV spectroscopy in the range 230-450 nm. With a 200 g sample the sensitivity of the method is 0.001-0.005 ppm. Samples of various coffee types marketed in Hungary and roasted in the laboratory to various degrees contained (µg/kg) 1.7-27.0 pyrene, 3.1-62.2 fluoroanthene, 0.6-33.2 1,2-benzanthracene, 0.2-6.0 3,4-benzpyrene and 0.7-10.0 of 1,12-benzperylene. Coffee decoctions from the same samples contained the hydrocarbons (same sequence) in the following amounts (µg/kg): 1.4-1.8; 3.1-6.5; 0.1-0.7; 0.1-0.5; and 0.2-1.3. IF

13

[Coffee machine.] Büro-Kaffeemaschinen im Gebrauch.
Anon.
Kaffee und Tee Markt **24** (7) 8-9, 24 (1974) [De]

Brief details are given of the design and operation of the 'Cafe-boy' automatic coffee-making machine (manufactured by the Protechnica Verkaufsgesellschaft mbH., Bremen, Federal Republic of Germany), designed for use in offices. The max. hourly throughput of the machine is approx. 120 cups of coffee. AJDW

14

[Europe - the largest coffee-consuming area in the world.] Europa - der grösste Kaffee-Konsumblock der Welt.
Anon.
Kaffee und Tee Markt **24** (9) 6-7 (1974) [De]

Seven West European countries (Belgium, Netherlands, Federal Germany, Italy, France, Austria and Spain), which took part in the EUCA meeting in May 1974, in Hamburg, represent 70% of Western European coffee consumption and 60% of total European consumption (UK, Switzerland and the Scandinavian countries are eventually expected to become members of EUCA). Since 1969, more coffee has been consumed in Europe than in the USA and Canada. Statistical tables give information about coffee consumption and imports in the USA, Canada and Europe in the period 1948-1973. Imports for the same period for the EEC countries are also tabulated. VHL

15

Brazil's bumper crop paves road for production forecast of over 80 million bags for coming year.
Anon.
Tea and Coffee Trade Journal **146** (9) 30-32, 46-47 (1974) [En]

The US Foreign Agricultural Service estimate of the 1974-1975 world coffee crop is discussed and tabulated by continent and country. Figures for world exportable production of green coffee ('000 60-kg bags) for 1973-1974 and 1974-1975 are: N. America, 8779 and 9690; S. America, 15 511 and 28 361 (of which Brazil accounts for 5500 and 18 000); Africa, 17 339 and 19 136; Asia, 2530 and 2720; Oceania, 654 and 688. World totals are 44 813 and 60 595 (a 35% increase). RM

16

Coffee brewing pack.
Schmidt, E. (Joh. Jacobs & Co.)
United States Patent 3 833 740 (1974) [En]

A pack for ground roasted coffee is provided with filter paper from which it is separated by a water-permeable layer through which the ground roasted coffee cannot pass. IFT

17

[Systematic studies of the industrial extraction of roasted coffee from different sources.]
Systematische Untersuchungen zur industriellen Extraktion von Röstkaffeeprovenienzen.
Mohr, E.
Kaffee und Tee Markt **24** (16) 3-6 (1974) [8 ref. De] [INGE Inst. für Genussmittelforschung GmbH, Hamburg, Federal Republic of Germany]

The following extraction method was used: 10 g coffee roasted to a standardized degree were finely ground and autoclaved with 200 ml distilled water using a magnetic stirrer, the desired temp. (e.g., 175°C) being reached in 20-30 min; the autoclave was opened after cooling in approx. 10 min; the DM content of the extract was determined and degree of extraction calculated with allowance for moisture content of the roasted coffee. The accuracy of the method was ±0.75%. Tests were carried out with Brazil, Burundi, Ruanda, Kenya, Kivu and New Guinea Arabica coffees and Cameroon, Ivory Coast, Indonesia and Togo Robusta coffees, all of 2.5-3.5 roasting degree [see FSTA (1971) **3** 9H1360] and extracted at 175° or 180°C. It is concluded from tabulated results that degree of extraction may vary from 31 to 57% depending on treatment conditions; that many Arabica coffees (e.g., Kivu, New Guinea) show degrees of extraction as high as those of Robusta coffees; and that differences between Arabica and Robusta diminish with increase in extraction temp. SKK

18

Coffee concentrate.
Sivetz, M.
United States Patent 3 830 940 (1974) [En]

Process is described for the preparation of an aqueous coffee beverage concentrate containing almost all the aromatic volatile constituents and about 18% of the non-volatile flavoured solubles. Pressurized hot water is made to flow upwards through vertical columns of ground roast coffee beans to produce a concentrate capable of yielding 50 cups of diluted beverage from each pound of original coffee. IFT

19

Coffee aroma product.
Yadlowsky, S. (General Foods Corp.)
United States Patent 3 836 682 (1974) [En]

Aromas, such as coffee aroma, are fixed in a liquid glyceride-carbohydrate solids medium which is then solidified, subdivided, blended with a liquid extract and dried. In a preferred embodiment, coffee aroma is added to a vegetable oil containing suspended particles of soluble coffee. IFT

20

Production of coffee from plant cell suspension cultures.
Townsley, P. M.
Canadian Institute of Food Science and Technology Journal 7 (1) 79-81 (1974) [7 ref. En, fr] [Dept. of Food Sci., Fac. of Agric. Sci., Univ. of British Columbia, Vancouver 8, British Columbia, Canada]

Suspension cultures of Coffea arabica can be roasted to yield coffee aromatics. The ability to produce 'coffee aroma' was not found in all cultures and could be lost from a previous coffee aroma producing culture for unknown reasons. Cell populations reached such high levels so as to impart an 'apple sauce' consistency to the growth medium. The replacement of the plant hormone, 2,4-dichlorophenoxyacetic acid with indoleacetic acid or kinetin induced the accumulation of oil-like drops within the cell. AS

21

A gas chromatographic comparison of the fatty acids of the green coffee bean, Coffea arabica and the submerged coffee cell culture.
Voort, F. van de; Townsley, P. M.
Canadian Institute of Food Science and Technology Journal 7 (1) 82-85 (1974) [11 ref. En, fr] [Dept. of Food Sci., Fac. of Agric. Sci., Univ. of British Columbia, Vancouver 8, British Columbia, Canada]

A free cell suspension of Coffea arabica in a defined medium has been obtained. Growth studies were undertaken following dry wt., pH and conductivity of the culture in defined and undefined medium. The cultures were grown in both light and dark. The fatty acids (neutral lipids) of the coffee cell suspensions were studied under the above conditions and compared to the fatty acids found in the leaves, stems and bean of the coffee plant via gas chromatography. The fatty acids of the plant cells were found to be similar to those found in the leaves and stems and could be differentiated from the bean by the presence of linolenic acid. AS

22

[Principal components of coffee aroma.]
Leitsubstanzen des Kaffee-Aromas.
Mohr, E.; Lahne, R.
Kaffee und Tee Markt 24 (9) 10, 12-14 (1974) [15 ref. De] [INGE Inst. für Genussmittelforschung GmbH, 207 Ahrensburg, Federal Republic of Germany]

Gas chromatic detn. of furfural and pyridine in coffee aroma extracts was carried out with a Perkin Elmer F20 intrument, column type 7253575, 2 m, static phase Marlophen 87. Ten sorts of roasted coffee were analysed after extraction of 12.6 g with 300 ml boiling water. Results showed pyridine contents of 4-8 ppm (mean, 5.6 ppm) and furfural contents of 12-22 ppm (mean, 18.3 ppm). The pyridine and furfural concn. in liquid coffee, coffee extract and coffee substitute were also determined; in all cases except 1 of imported liquid coffee, levels were below those of the means for the roasted coffees. Two methods of roasting were also compared: Probat and Aerotherm. The furfural content did not vary to any great extent, but the pyridine content was reduced by 27% when the Aerotherm roasting method was used. The pyridine content also increased by 17% when steam was applied to Aerotherm-roasted coffee for 10 min at 110°C. VHL

23

[Coffee roaster - a 'package' installation.] Die Kaffee-Rösterei - ein Anlagen-Paket.
Wulfmeyer, H.
Kaffee und Tee Markt 24 (9) 28, 30, 32-33 (1974) [De]

The 'Probat' combined, complete and automated installation for production of packaged ground coffee from raw beans is described. The sequence of operations covers: reception of coffee beans in sacks; turntable inspection and sorting: main large (sectioned) storage silos for raw beans followed by secondary silos for supplying coffee roasters; distribution to central roasted coffee silos and thence to coffee mills; and packaging of the finished coffee. Handling of waste exhaust air and entrained dust particles is also covered. Detailed descriptions with illustrations are given of the individual units and movement of material between them; electronic systems of automation and programme control are incorporated. ELC

24

[Thoughts on the present position of roasting methods for coffee.] Gedanken zum gegenwärtigen Stand von Röstverfahren für Kaffee.
Anon.
Kaffee und Tee Markt 24 (9) 20, 22, 24 (1974) [De]

Types of coffee roasting machines in common use are discussed, with explanatory diagrams. These include single rotating drum types, usually batch operated, centrifugal bowl types and continuous twin-drum roasters. Particular attention is given to heat transfer characteristics and aspects of thermal economy, including systems of hot air re-circulation, integral systems of air circulation and heating, supplementary external air circulation and heating and heat exchange between warm exit air and incoming cold coffee. All systems utilize various combinations of heating by conduction and convection; heating by convection only would result in a machine of excessive size. ELC

25

[Grinding of roasted coffee after measurement.] Röstkaffeevermahlung nach Mass.
Dlugosch, L.
Kaffee und Tee Markt 24 (9) 40, 42-43 (1974) [De]

The choice of industrial mills for roasted coffee beans is reviewed, the object being to produce

measured quantities of a fine, uniform, free-flowing product, with separation of husk material, min. generation of heat and min. airflow. Mills must be capable of long daily periods of operation, with min. wear, stoppages for maintenance and noise (requiring special enclosure). Relevant factors are degree of granulation required, size of equipment and optimum power usage, quality of beans, ease of supervision and cleaning and possible need for water cooling of rolls and bearings. Points considred in relation to fineness of milling with twin rolls are: roller length and diam., surface hardness, roll gap, differential speeds of rotation and pattern (rifling) of surface fluting. A detailed discussion of the latter is given. ELC

26

[New nitrogen-containing heterocyclic compounds in coffee aroma.] Neu entdeckte Stickstoffheterocyclen im Kaffee-Aroma.
Vizthum, O. G.; Werkhoff, P.
Zeitschrift für Lebensmittel-Untersuchung und -Forschung **156** (5) 300-307 (1974) [27 ref. De, en] [Wissenschaftliche Abteilung der HAG AG, Bremen, Federal Republic of Germany]

Steam volatiles of roasted coffee were separated into basic and neutral components after enrichment on Porapak Q, and analysed by combined glass capillary gas chromatography-mass spectrometry. 43 new heterocyclic compounds were identified in the basic coffee fraction. Thiazole was detected and identified at a concn. of approx. 0.1 ppb. Even though the total number of volatile compounds reported as present in roasted coffee is now 468, there is strong evodence that the substances identified represent only part of the actual number of coffee components. Possible pathways for the formation of alkyl- and acyloxazoles are discussed. AS

27

Decaffeinated coffee.
Roselius, W.; Vitzthum, O.; Hubert, P. (HAG AG)
United States Patent 3 843 824 (1974) [En]

Rough ground roast coffee is extracted with a dry supercritical fluid, after which the coffee is wetted with water and extracted with supercritical carbon dioxide to remove caffeine. The coffee is then extracted with water to produce an aqueous extract, which is dried to yield a powder residue and combined with the coffee oil containing aroma substances from the original extraction step. IFT

28

Decaffeinated coffee.
Fazzina, T. L.; Jones, G. V.; Scelia, R. P. (General Foods Corp.)
United States Patent 3 840 684 (1974) [En]

Blends of high- and low-grade roasted and ground decaffeinated coffee having improved flavour contain ≥20% high-grade coffee which has been organic solvent decaffeinated, and ≥30% low-grade coffee which has been water decaffeinated. IFT

29

[Soluble chicory.]
Timokhina, L. M.; Gulyaev, V. N.
Konservnaya i Ovoshchesushil'naya Promyshlennost' No. 4, 24-26 (1974) [Ru] [Proizvodstvennoe Ob'edinenie "Rostovkofetsikorprodukt", USSR]

A technology for producing a soluble coffee substitute from roasted chicory is described. It was established experimentally that leaching in water at 85-90°C was most effective for extracting the constituents of roasted chicory; 17-18% of these substances remained in the DM after extraction. Samples of soluble coffee substitute containing inulin and fructose in a ratio of 3:2 gave the best organoleptic evaluation. An increase in the temp. of extraction or roasting caused more fructose and less inulin to pass into the solution, giving an undesirable effect. The optimum size for the chicory grains on grinding was also studied. An outline of the production method is presented. 2-3 g of the chicory coffee substitute are required/glass of beverage. STI

30

Aluminium phosphide; tolerances for residues. United States of America, Environmental Protection Agency
Federal Register **39** (199, Oct. 11) 36588 (1974) [En] [Washington, DC, USA]

A tolerance of 0.1 ppm is established under the Federal Food, Drug, and Cosmetic Act for residues of the fumigant PH_3 on the following commodities resulting from postharvest treatment with AlP: almonds, Brazil nuts, cashews, cocoa beans, coffee beans, cottonseed, dates, filberts, pecans, pistachio nuts, popcorn, soybeans, and walnuts. CAS

31

[Text of Decree controlling hygienic aspects of production of and trade in coffee and coffee derivatives in Italy, issued February 1973.]
Italy, Presidente della Republica
Industrie Agrarie **11** (12) 392-394 (1973, publ. 1974) [It]

32

Continuous freezing of liquids with liquid nitrogen.
[Conference proceedings]
Sulc, S.
IV International Congress of Food Science and Technology **5a**, 56-58 (1974) [En] [Food Res. Inst., Bratislava, Trencianska 53, Czechoslovakia]

Fruit juices and coffee extracts with 10-30% DM were frozen with liquid N_2 to a granule size of 2-4 mm, stored at -12, -18, -24, -30 and -40°C and

examined for sensory and nutritive changes. Recrystallization causing deterioration in appearance took place during storage at -12 and -18°C, not at -24 to -40°C. The same higher temp. also caused greater flavour, odour and ascorbic acid losses during 9 months storage. Ascorbic acid in stored strawberry juice was 28.6% of the initial content at -12°C, 45.2% at -18°C, 68.9% at -24°C, 72.6% at -30°C and 86.3% at -40°C. RM

33

[Method and device for cleaning roasted coffee beans.] Verfahren und Vorrichtung zur Reinigung von gerösteten Kaffeebohnen.
Veranneman, G. (Linde AG)
German Federal Republic Patent Application 2 306 430 (1974) [De]

Impurities such as roasting residues, cellulose, etc., which adhere to coffee beans after roasting and spoil the flavour and aroma are removed by cooling the beans to low temp. by a circulating cooling stream, preferably liquefied gas e.g. N_2, or a gas e.g. N_2 which is cooled by liquefied gas. The cooling stream moves the beans over a perforated rough wall, causing the skins to burst and become washed away through the perforations with the cooling stream. Centrifugal force due to circulation of the cooling stream increases friction on the skins, aids separation of the skins, and prevents blocking of the holes. W&Co

34

Method of removing undesirable solids from coffee extract.
Chaplow, R. A.; Hodgman, R. A. (General Foods Ltd.)
United States Patent 3 843 823 (1974) [En]

A filtered aqueous coffee extract is freeze-concentrated, and the concentrate subjected to a desludging-type centrifuge to remove insolubles which would otherwise cause black spots to appear upon reconstitution. IFT

35

Probat provides new answers to coffee roasters' constantly changing production and labour problems.
Holmberg, G.
Tea and Coffee Trade Journal 146 (9) 20-21 (1974) [En]

New equipment for the coffee roasting industry developed by Probat is briefly described, including: a catalytic after-burner for spent air, which reduces the cost of roasting and cleaning spent air; a bag dumping wheel allowing one operator to open ≥300 bags/h; a solid cylinder continuous roaster allowing precise exposure of beans to controlled heat, the beans being suspended in air by a forced-air system, thereby providing clean unabrasive roasting; a water-cooled coffee grinder designed for fine grinding for filter or Turkish-type coffee; and the Probat-Progres System - a solid-state process computer for controlling data from the entire coffee plant. RM

36

Studies on black bean disorder of coffee.
Gopal, N. H.; Venkataramanan, D.
Indian Coffee 38 (9/10) 259-267 (1974) [3 ref. En] [Central Coffee Res. Inst., Coffee Res. Sta. - 577117, Chikmalagur District, Karnatka St., India]

Visual observation, anatomical studies and analytical data of carbohydrate fractions revealed that the formation of "black jelloo" and "black bean" in coffee were due to poor filling of the endosperm and low accumulation of carbohydrates, respectively, in developing beans. The first disorder occurs during growth of the endosperm, the second during rapid accumulation of DM after endosperm growth is completed, and is due mainly to insufficient carbohydrates, especially non-reducing sugar and starch in beans during hardening. It was not connected with Ca content of beans or with coffee curing or processing. The high incidence of the 2 disorders (10% and 45% respectively) was reduced to 1% by improving cultivation methods (spraying, fertilizing, pruning, shade regulation etc.). RM

37

Ethephon: tolerances for residues.
United States of America, Environmental Protection Agency
Federal Register 39 (240, Dec. 12) 43290-43291 (1974) [En] [Washington, DC, USA]

Tolerances are established under the Federal Food, Drug, & Cosmetic Act for the title plant regulator ((2-chloroethyl) phosphonic acid) as follows: figs, 5 ppm; coffee beans, 0.1 ppm. CAS

38

[Thermal diffusivity of freeze-dried foods.]
Fito, P.; Pinaga, F.; Aranda, V.
Revista de Agroquimica y Tecnologia de Alimentos 14 (3) 409-415 (1974) [17 ref. Es, de, en, fr] [Inst. de Agroquimica y Tecnologia de Alimentos, Valencia, Spain]

An experimental device for determination of the thermal diffusivity of freeze-dried foods in non-stationary conditions is described and first results obtained for avocados and coffee extract are given. Polystyrene was used as reference system for development of the technique and study of the accuracy of the method. The value found for thermal conductivity of polystyrene -0.0317 W/m°K- differ only 3% from that given in the literature: 0.0326 W/m°K. In the range 25-55°C, thermal diffusivity of both freeze-dried avocado and coffee increased linearly with temp.; temp. coeff. was slightly higher for avocado. With decreasing pressure from 760 t 1 Torr, coffee diffusivity fell from 0.150×10^{-6} to 0.100×10^{-6} m^2/s. that of

avocado from 0.087 to 0.072 m^2/s. Max. variation of this transfer parameter with pressure took place in the range 5-150 Torr. The device here described is simple and gives quick and precise results. AS

39

Disposable coffee bags.
Kaplan, R. A.
United States Patent 3 846 569 (1974) [En]

A method for making disposable, semiannular prefilled coffee bags of porous sealable paper or the like is described. IFT

40

New freeze-drying method permits continuous processing.
Anon.
Food Production/Management 97 (6) 20 (1974) [En]

Details are given of a process which allows products to be freeze-dried continuously by eliminating the build-up of ice within the system. Foods are first frozen and then placed in vacuum chambers, where the frozen water in the food is driven off by exposing the food to heat, giving direct conversion of ice to vapour. To control the pressure created by the vast quantities of vapour produced in freeze-drying, the vapour is converted back to ice by condensing it against refrigetaed walls, but the build-up of this ice within the vacuum chamber system has hitherto restricted freeze-drying to batch operation. However this can be overcome if the refrigerated walls of the condenser are continuously flushed with an extremely cold brine solution. As the vapour contacts this solution, (which has a much lower fp than water) it is converted back to ice and carried out of the system as a slurry of ice-in-brine. From a separator the brine solution is diverted back to the condenser and the ice is discharged as waste water. The system will be applied to coffee, soup mixes and possibly fruit juices. AA

41

Thermal behavior of trigonelline.
Viani, R.; Horman, I.
Journal of Food Science 39 (6) 1216-1217 (1974) [11 ref. En] [Res. & Dev. Dept., Nestle Products Technical Assistance Co. Ltd., Lausanne, Switzerland]

The decomposition products formed when trigonelline is pyrolysed at 180-230°C for 15-60 min in a sealed tube have been analysed by TLC and GC-MS. Nicotinic acid has been found in the residue along with some polymeric material. A total of 29 compounds, corresponding to 84% of the volatiles formed by pyrolysing trigonelline under the above conditions, has been identified in the volatile fraction; 9 of these had been previously identified in coffee aroma. IFT

42

Oxazoles nd thiazoles in coffee aroma.
Vitzthum, O. G.; Werkhoff, P.
Journal of Food Science 39 (6) 1210-1215 (1974) [32 ref. En] [Res. Dept., Hag Aktiengesellschaft Bremen, Hagstrasse, 28 Bremen, Federal Republic of Germany]

20 oxazoles and 23 thiazoles not previously reported as constituents of roasted coffee were identified by a combination of glass capillary gas chromatography and MS. Roasted coffee volatiles were isolated using atmospheric steam distillation. The enrichment of steam volatiles was carried out on Porapak Q followed by organic solvent extraction and separation of the organic phase into basic and neutral fractions. IFT

43

Improvements in the washing operation of coffee harvested with plastic nets.
Cancel, L. E.; Hernandez-Torres, I.; Hernandez, E. R. de; Rosario-Hernandez, J. A.
Journal of Agriculture of the University of Puerto Rico 58 (1) 1-10 (1974) [En, es] [Agric. Expt. Sta., Mayaguez Campus, Univ. of Puerto Rico, Rio Piedras, Puerto Rico]

Coffee harvested in plastics nets consists of coffee beans and a large amount of twigs with attached berries, decayed leaves, dirt and seeds. Modifications were made to a commercially available washer to reduce the amount of foreign materials to an acceptable level. Coffee from a holding bin was gravity fed to a hopper then to a washing cylinder composed of a partially perforated casing and a revolving spoked axle. From the cylinder coffee was forced by paddles onto a shaker screen consisting of a perforated metal sheet. Coffee and twigs dropped from the shaker screen into a flotation tank where the flotating material was carried by the water into a screening tank where twigs were removed. It was found that the feed opening to the washer did not permit free flow of material and had to be enlarged from 3.5 × 3.5 in to 3.5 in long × 10 in wide. A screw conveyor was added to the cylinder axle to force the material into the washing cylinder without hammering the coffee beans and with reduced coffee hulling action. Flotation tank overflow water was recovered in a screening tank and pumped back into the washing cylinder. This system handled 800-1100 lb wet parchment coffee/h with water requirement of 600-700 gal/h. Removal of twigs was 96% efficient and flotation loss of coffee was <1%. CRI

44

[Method of utilizing cocoa husks in the production of granular coffee mixtures.]
Sroczynski, A.; Organisciak, K.; Waczynski, R.
Przemysl Spozywczy 28 (11) 410-412 (1974) [4 ref. Pl, ru, en, fr, de]

The taste and flavour of cocoa husk extracts can be improved by refining the husks in 1 of the following ways: application of water vapour to the husks; strong moisturization of the husks with water; and moisturization with solutions of compounds which reduce the natural acidity (e.g. sodium carbonate and bicarbonate, potassium and ammonium carbonate and bicarbonate). In the course of experimentation, new compositions of aromatized granular coffee mixtures with addition of refined cocoa husks have been developed. AS

45

Coffee freeze concentration.
Dwyer, D. E., Jr. (General Foods Corp.)
United States Patent 3 845 230 (1974) [En]
A continuous process of freeze concentrating coffee extract in a single pass through a heat exchanger to 35-50% solids content is described. IFT

46

Coffee carbonated beverage.
Suzuki, S. (Ogawa & Co. Ltd.)
United States Patent 3 845 220 (1974) [En]
Foam production and foam stabilization properties of coffee carbonated beverages are controlled by addition of selected enzymes, followed by heating to deactivate the enzymes and sterilize the beverage. IFT

47

Extraction of coffee and tea.
Nestle SA
British Patent 1 366 331 (1974) [En]
Volatile aromatic constituents of coffee or tea are extracted with liquid carbon dioxide while soluble solids are extracted with water. The two extracts are then combined to yield a final product. IFT

48

Tea and coffee extracts.
Nestle's Products Ltd.
British Patent 1 367 616 (1974) [En]
Aqueous tea and coffee extracts containing ≥30% solids are cooled to near the fp and then subjected to reduced pressure to produce frozen, expanded compositions. The compositions are then comminuted and freeze-dried. IFT

49

How do you know what went into soluble coffee imported from another country?
Siveta, M.
Tea and Coffee Trade Journal 146 (11) 24, 30-31 (1974) [En]
Results of analyses of Brazilian soluble coffee (sponsored by IBC, the Brazilian Coffee Institute) are reported. 16 samples from different processors were analysed for moisture, pH, acidity, caffeine, chlorogenic acid, tannin, sugars (reducing and non-reducing), pentosans, ether extract (mainly oils), N (hence protein), ash (acid-soluble and -insoluble), K, Ca, Mg, PO_4^{3-}, Fe and Na. Samples from 4 factories had a purity index of 90-97%, samples from 6 factories an index of 83%, and samples from 5 factories an index of 55-70%. There was 1 sample with min. commercial solubles yield (>3.0% caffeine), 1 sample with 2.84% caffeine and the rest had <2.5% caffeine. 1 sample had exceptionally high Na, 1 had exceptionally high PO_4^{3-} and several had high Fe contents. RM

50

Studies in foam-mat drying of coffee extract.
Chandak, A. J.; Chivate, M. R.
Indian Food Packer 28 (2) 17-27 (1974) [18 ref. En] [Dept. of Chem. Tech., Univ. of Bombay, Matunga, Bombay 19, India]
The suitability of the foam-mat drying technique for drying of coffee extract was studied. It was shown that conc. coffee extract containing 30% soluble solids could be beaten into a stable foam suitable for foam-mat drying with 3% glyceryl monostearate at 650 rev/min, using a propeller with 8 blades for 30 min. The stable foam, when dried under optimum conditions, yielded a product which was quite porous and could be easily reconstituted. Further studies are to be carried out on extraction techniques, concn. and flavour fortification with the hope of further improving the quality of the product. AA

51

Decaffeination. A process to detoxify coffee pulp.
Molina, M. R.; Fuente, G. de la; Batten, M. A.; Bressani, R.
Journal of Agricultural and Food Chemistry 22 (6) 1055-1059 (1974) [18 ref. En] [Div. of Agric. & Food Sci., Inst. of Nutr. of Central America and Panama (INCAP), Guatemala City, Guatemala]
The effect of a decaffeination process on the toxicity and nutritive value of coffee pulp was evaluated in rats. The decaffeination was by extraction at 25° and by percolation at 95°C. At 20 and 30% of the diet, the pulp subjected to either treatment showed asignificantly ($P < 0.01$) lower feed efficiency ratio than the dehydrated coffee pulp. At the 50% level, the percolated pulp caused a significant decrease in the mortality index compared with the dehydrated coffee pulp and/or the decaffeinated pulp at 25°C. A significant reduction in mortality was achieved with the latter by applying a complementary alcohol-extraction treatment. A high correlation was found between mortality and tannins, chlorogenic and total caffeic acids ($r = 0.92, 0.94$, and 0.97, respectively).

Decaffeination of the material could be effected both in the fresh or dehydrated states under equal processing conditions. It is concluded that this process offers an opportunity for the industrial use of coffee pulp. AS

52

[Exhaust air cleaning in the coffee-roasting industry.] Abluftreinigung in der Kaffeeröstindustrie.
Naves, E.
Kaffee und Tee Markt 24 (20) 5-9; (21) 4, 6-8 (1974) [De]

This illustrated article considers in detail types of impurities present in the exhaust air; the clean-air regulations; different methods of removal of impurities; determination of impurities; results of tests with an exhaust gas burner and with an installation with recirculation of exhaust air (Ferd. Gothot GmbH, Mühlheim/Ruhr, Federal Republic of Germany); and fuel consumption in exhaust air cleaning. Characteristics of roasting installations without air cleaning; with cleaning by burning; with recirculation; and with recirculation and heat exchange are tabulated. SKK

53

[A crystallized bitter constituent isolated from Coffea vianneyi Leroy seeds.]
Hamonniere, M.
Cafe-Cacao-The 18 (4) 277-278 (1974) [5 ref. Fr] [Lab. de Recherches de l'IFCC, Nogent-sur-Marne, France]

A heteroside bitter compound was isolated in crystal form from Coffea vianneyi Leroy berries and named mascaroside. Extraction, purification and characterization are described. RM

54

Potassium and other mineral contents of green, roasted and instant coffees.
Clarke, R. J.; Walker, L. J.
Journal of the Science of Food and Agriculture 25 (11) 1389-1404 (1974) [14 ref. En] [Tech. Res. Dept., General Foods Ltd., Banbury, Oxfordshire, UK]

Experimental work was carried out to determine the normal ash, sulphated ash and K contents of 4 selected and specified green coffees, as well as the relationship between extraction yield and K content of prepared instant coffees. In conjunction with previously published data on mineral contents of coffees, the relationship is shown to be capable of giving only an arbitrary measure of extraction yield, primarily due to the variability of mineral and K contents of different green coffees, and to a lesser extent to the variable process conditions that are commercially used in extraction. The reasons for the variability of mineral content, which can be at least +10% of the average, are discussed. AS

55

Coffee blender's art runs into trouble when he applies his skill to soluble: how will it come out of the extractor?
Lee, S.
Tea and Coffee Trade Journal 146 (11) 10, 12 (1974) [En]

The difficulties of green coffee blending for production of soluble coffee are discussed, with particular reference to off-flavours developed during processing and appearance of unpleasant flavour under-tones during ageing. This latter defect should be tested for by comparing cup tests comparing coffees aged for 6 months and 1 yr with fresh products. RM

56

Instant coffee.
General Foods Ltd.
British Patent 1 369 816 (1974) [En]

Instant coffee compositions are produced by agglomerating a low bulk density coffee powder produced by drying a foamed extract. IFT

57

Coffee decaffeination.
Hag AG
British Patent 1 372 667 (1974) [En]

Raw coffee is decaffeinated by adjusting its moisture content to 10-60% and selectively extracting the caffeine with liquid CO_2 containing water at a pressure above the critical pressure of CO_2. IFT

58

[Chemical and technological characteristics of Mozambique Racemosa coffees.]
Lopes, M. H. C.
Cafe-Cacao-The 18 (4) 263-276 (1974) [27 ref. Fr, de, en, es] [Inst. de Invetigacao Agronomica de Mozambique]

16 samples of green and roasted Racemosa (RM) coffee from 4 regions of Mozambique were analysed and compared with Arabica (A), Robusta (R), and Liberica (L) coffees. Physical, chemical and technological characteristics are shown in tables. RM was characterized by very small grains; mean 100-grain wt. was 5.77 g vs. 14.09, 13.86 and 29.16 for A, R and L respectively and 100 grain vol. was 5.15 cm^3 vs. 11.51, 11.40 and 24.30. Mean roasting yield was 84.91% vs. 85.4, 82.6 and 84.5%, and % roasting loss was 15.09 vs. 14.6, 17.4 and 15.6. Chemical analysis showed low caffein content (approx. 0.83 g/100 g DM, about half the content of A and a quarter that of R) and high acidity (2.19% as oleic acid). Other values were similar to A, R and L. Changes during roasting included destruction of sugars (from 5.70 to 1.12

g/100 g DM) with a corresponding decrease in aqueous extract, cellulose, and a substantial decrease in several amino acids, especially lysine, and virtual disappearance of cystine and arginine. Fatty acid composition of oil from green and roasted coffees was: palmitic, 39.10 and 38.82%; linoleic, 34.68 and 36.34%; stearic, 10.40 and 10.20%; and oleic, 9.98 and 10.30%. Due to its small grain size and low caffein content this coffee is particularly recommended for soluble coffee and extract production, especially for decaffeinated coffee. RM

52

[Improvements in the packaging of coffee.]
Garsault, J.
French Patent 2 210 174 (1974) [Fr]

Coffee is packed in a number of small packages, each containing the amount needed for one infusion. The packages are in the form of a continuous strip, from which each package may be detached without affecting the sealing of the adjacent ones. This ensures that the coffee is always completely fresh, and overcomes the problem of loss of flavour which occurs once a conventional jar has been opened. W&Co

53

Storage research. Recent developments. The autocool silo.
Stirling, H. G.
Kenya Coffee 39 (462) 253-256 (1974) [En]
[Coffee Board of Kenya, PO Box 30566 Nairobi, Kenya]

A coffee storage system is described using a differential thermostat and humidistat to control a ventilation fan. 2 temp. sensors are used, 1 placed in a meteorological screen outside, the other in the bulk of the coffee in the silo, ensuring operation of the fan when outside temp. is 0.5°C below internal temp., and overriden by 2 humidistats at 50 and 68% RH. During a 3 months trial, coffee temp. was evenly reduced from 24° to 17.5 ± 1°C. The control principle could be extended to other temp. and moisture reanges. The circuit diagram and silo design are shown graphically. RM

54

Better coffee farming: coffee processing.
Kenya, Ministry of Agriculture
Kenya Coffee 39 (462) 249-251 (1974) [En]

The importance of careful coffee parchment drying is explained and 6 stage in drying between 'skin-dry' (49-45% moisture) and 'fully dry' (11-10% moisture) are described. RM

55

Coffee extraction.
Miko PVBA
British Patent 1 376 074 (1974) [En]

A coffee infusion is prepared by introducing a quantity of ground roasted coffee into a cartridge between 2 filter paper bases and pouring hot water onto the cartridge. IFT

56

A study on the performance of some varieties of coffee in Bangladesh.
Ahmad, K.; Mollah, A. S.
Bangladesh Horticulture 1 (2) 29-36 (1975) [6 ref. En, bi] [Div. of Horticulture, Bangladesh Agric. Res. Inst., Dacca, Bangladesh]

The suitability of 8 coffee var. for growing in Bangladesh was investigated. Plant characteristics including flowering, fruit and berry yields are tabulated. After harvesting, berries were cured in the sun resulting in a moisture loss of 62.83%. Cleaning by removal of the seed-coat further reduced the wt. to 14.63% of the original. Roasting and grinding then reduced the coffee wt. to 13.11%. CRI

57

Pollution of rivers by coffee factories.
Anon.
Kenya Coffee 39 (463) 295-296 (1974) [4 ref. En]

Legislation regulating water usage by coffee factories, and pollution control measures by recirculation are briefly discussed. IFT

58

[Reclosable package.]
Christensson, D. W. (Esseltepac AB)
Swedish Patent Application 370 682 (1974) [Sv]

A package for oxygen-sensitive food products, e.g. coffee, has an outer cardboard container and a tubular inner lining of thin pliable material, the ends of which coincide with the ends of the container. One side wall incorporates a tear strip opening, and there is a reclosable lid. W&Co

59

[Reclosable package.]
Christensson, D. W. (Esseltepac AB)
Swedish Patent Application 370 683 (1974) [Sv]

This package is similar to the one described in the preceding abstr., and can be used for packaging coffee, cocoa, flour and sugar. HBr

60

Collaborative study of a method for the determination of ochratoxin A in green coffee.
Levi, C. P.
Journal of the Association of Official Analytical Chemists 58 (2) 258-262 (1975) [4 ref. En]
[General Foods Corp., Tech. Center, White Plains, New York 10623, USA]

A method for the semiquantitative detn. of ochratoxin A in green coffee has been studied collaboratively by 11 laboratories. The average recovery for the 7 samples spiked at 3 levels of ochratoxin A was 69.1%, ranging from 60.5 to 85.6%. This is comparable to other visual TLC methods of mycotoxin detection. The method has been adopted as official first action for the detn. of ochratoxin A in green coffee beans. AS

61

[Colour reactions of coffee constituents in examination and evaluation of raw coffee.] Über Farbreaktionen mit Kaffeeinhaltsstoffen zur Untersuchung und Bewertung von Rohkaffee.
Wurziger, J.
Kaffee und Tee Markt **24** (23) 3-4, 6-8; (24) 5-9; **25** (1) 6-9; (2) 8-12; (3) 22-24 (1974/1975) [17 ref. De] [Chem. und Lebensmitteluntersuchungsanstalt, Hygienisches Inst., Hamburg, Federal Republic of Germany]

The procedures, application and evaluation of the following colour reactions of coffee constituents are presented in detail: for differentiation of Arabica and Robusta coffees (gaseous HCl treatment of coffee beans; HCl treatment of methanol extract of raw coffee; KI and glacial acetic acid treatment of coffee oil; detection of Robusta coffee beans by HCl treatment of coffee oil); for detection and evaluation of quality changes in raw coffee caused by preparation and storage (fuming HCl treatment of light-petroleum extracts of raw coffee; alkali colour value for detection and evaluation of fat changes in raw coffee; HCl colour value and alkali colour value in evaluation of raw Arabica coffee); and for detection of effects of processing of Arabica and Robusta raw coffees (carboxylic acid-5-hydroxytryptamides in methanol extracts of raw coffee; colour reactions with 3-methoxy-4-hydroxystyrene for detection of raw coffee processing; study of diethyl-ether extracts of aqueous raw coffee infusions; and study of steam distillates of raw coffee for rapid detection of processing). SKK

62

Possible cocarcinogenic effects of coffee constituents. [Letter]
Challis, B. C.; Bartlett, C. D.
Nature, UK **254** (5500) 532-533 (1975) [14 ref. En] [Dept. of Organic Chem., Imperial Coll., London SW7 2AZ, UK]

It is reported that readily oxidized phenolic compounds act as catalysts rather than inhibitors for N-nitrosamine formation from nitrite salts and secondary amines at gastric pH. This finding has important implications on the possible cocarcinogenic properties of several foodstuffs and beverages, including coffee. Experiments showed that 4-methylcatechol and the phenolic component of chlorogenic acid (about 13% dry wt. in the soluble constituents of coffee, equivalent to about 250 mg/cup) exerted very similar catalytic effects on N-nitrosamine formation. AL

63

[New technology for production of instant coffee substitute from cereals.]
Pazola, Z.; Pordab, Z.
Przemysl Spozywczy **29** (1) 21-23 (1975) [6 ref. Pl]

The production of 'Inka' instant cereal coffee substitute [see FSTA (1972) 4 2H295] is expected to reach 10 000 t in 1975 (out of a total cereal coffee production in Poland of 30 000 t/yr). Cleaned wheat and barley and dried chicory roots and sugar beets, used as raw materials, are roasted in rotating cylindrical Probat or Barth ovens (gelatinization and partial saccharification at 100°C for 10-25 min, drying 100-110°C for 25 min, and roasting proper for 50-60 min at 110-200°C). Extraction and drying are essentially as described in FSTA (1972) 4 2H295, but extracts are amylase-treated to reduce viscosity, and concentrated to 40-50% DM content before spray-drying at 240-280°C inlet air temp. and 100-110°C outlet air temp.; CO_2 under pressure is introduced before the drying process. The bulk density of the product is 200-300 g/l. The production line is diagrammatically illustrated. SKK

64

[Process for manufacture of soluble instant Turkish coffee, also known as Moorish coffee.]
Kordally, G.
French Patent Application 2 211 184 (1974) [Fr]

Instant Turkish coffee is made by mixing 1 and 4 parts respectively of white sugar and powdered coffee (possibly decaffeinated) with 2 and 1 parts respectively of powdered caramel and finely powdered brown sugar. The taste is authentic and the product may be sold in powder, granule or liquid extract from. W&Co

65

[From raw coffee to roasted coffee. I. Storage and processing of raw coffee.] Vom Rohkaffee zum Röstkaffee. I. Lagerung und Bearbeitung von Rohkaffee.
Schlichtenbrede, C.
Kaffee und Tee Markt **25** (2) 3-5 (1975) [De] [Probat-Werke, Emmerich, Federal Republic of Germany]

This article deals briefly with reception of coffee beans at the factory (capacity should be 12-24 t (200-400 bags)/h); the stages of weighing, cleaning and storage (silos with 6-40 compartments for 50-5000 t are recommended); and intermediate storage before rosting. A detailed description of processing of data concerning the operations named above will appear in part IV. SKK

66

[From raw coffee to roasted coffee. II. Roasting machines for coffee.] Vom Rohkaffee zum Röstkaffee. II. Röstmaschinen für Kaffee.
Gimborn, C. H. von
Kaffee und Tee Markt **25** (4) 3-5 (1975) [De] [Probat-Werke, Emmerich, Federal Republic of Germany]

The coffee roasting installations of the **Probat**-Werke (Emmerich) with combined or with convection heating for batch or continuous operation are illustrated and described. All incorporate prevention of smoke emission. [See preceding abstr. for part I.] SKK

67

National coffee brewing habits influence production of soluble.
Mohr, E.
Tea and Coffee Trade Journal **147** (1) 37-38 (1975) [3 ref. En] [Inge Inst. für Genussmittelforschung GmbH, 2070 Ahrensburg, Federal Republic of Germany]

The differences between the 5 main coffee types (Italian, French, German, International and Turkish) are discussed. Analytical and taste differences are shown in tables. RM

68

[Soluble solid contents in Coffea arabica L. and Coffea canephora Pierre.]
Moraes, R. M. de; Angelucci, E.; Shirose, I.; Medina, J. C.
Coletanea do Instituto de Tecnologia de Alimentos **5**, 199-221 (1973/1974) [7 ref. Pt, en]

Samples of Coffea arabica L., C. canephora Pierre, and their hybrid Icatu, were prepared from three different roast points (at 11.0-18.3% wt. loss). After sieve classification and colour detn. in a three-stimulus colorimeter, the soluble solid contents were determined by the following methods: Navellier, modified AOAC, Brazilian, and Jakober & Staub [see Wibaux, R. (1967) III Colloque International sur la Chimie des Cafes, 77-85; Association Scientifique Internationale du Cafe, Paris]. The results obtained through the Navellier method, which showed the best results of the four methods employed, were significantly higher for the canephora samples, with 26.07-30.61%, vs. 23.85-27.31% for the arabica samples. The results obtained for the hybrid ranged from 26.81 to 28.65%, i.e. between the values obtained for canephora and arabica. Increases in the soluble solid contents of the dark roasted samples were observed, as well as slight variations with the light and medium roasted samples. AS

69

[Chemical and sensory evaluation of the main Brazilian instant coffees.]
Angelucci, E.; Moraes, R. M. de; Yokomizo, Y.; Campos, R. B. de; Miya, E. E.; Figueiredo, I. B.; Shirose, I.; Medina, J. C.
Coletanea do Instituto de Tecnologia de Alimentos **5**, 281-304 (1973/1974) [17 ref. Pt, en]

The chemical composition of 16 samples of Brazilian produced spray-dried and freeze-dried instant coffees was determined. The range of values is given for pH, total acidity, caffeine, chlorogenic acid, tannin, total and reducing sugars, pentosans, ether extract, total N, ash, acid-insoluble ash, ash alkalinity, K, Ca, Mg, PO_4^{3-}, Fe, Na and individual amino acids. Organoleptic evaluation was made by triangular and preference tests. All samples were evaluated by ranking order for aroma, acidity and infusion characteristics. All except 2 samples had normal aroma; all except 3 strongly acid ones had normal acidity. 8 samples were evaluated as hard, the rest as slightly soft. RM

70

[Defects of coffee and beverage quality.]
Miya, E. E.; Garruti, R. S.; Chaib, M. A.; Angelucci, E.; Figueiredo, I. B.; Shirose, I.
Coletanea do Instituto de Tecnologia de Alimentos **5**, 417-532 (1973/1974) [17 ref. Pt, en]

A detailed study on the importance pf coffee defects and their influence on beverage quality was carried out. Two kinds of standard beverage, classified as "soft" and "hard", were mixed with several amounts of defective beans and were given to an expert coffee-taster panel for the cup-test. Chemical and chromatographic analysis of the coffee beans was also carried out. The results by the "Triangular Method" showed that with the soft standard beverage any variation is more easily detected than with the hard standard beverage, because 5% green coffee changed the flavour of the soft beverage while 40% green coffee was needed to change the flavour of the hard beverage. The same thing occurred with other defects. Applying a "Scoring Scale Method", it was shown that only 7.5% "black beans" changed the beverage quality, but 30-50% "green" and "burnt" defects did not change the quality of standard coffee beverage. The beverage quality of coffee depends on the amount of defective beans and on the extent of the defect. AS

71

[Some considerations concerning packaging of Brazilian soluble coffee for export.]
Quast, D. G.; Gil, L. R. P.
Coletanea do Instituto de Tecnologia de Alimentos **5**, 377-397 (1973/1974) [8 ref. Pt, en]

Brazilian coffee for export is generally packaged in polyethylene bags in corrugated fibreboard outer cases, as protection against oxidation is normally not required, only protection against moisture absorption. However, in view of increasing demands to protect against oxidation, particularly

with the increasing trade in dried coffee, tests were carried out to determine the protection offered against moisture and oxidation by various plastics materials, viz. polyethylene, nylon, Cellophane (MSAT), polyester and polypropylene. Best protection against both would be offered by the Cellophane and polyester. Costs factors are also discussed. HBr

72

Dehydration and packaging of foodstuffs.
Scott, R. D. (Research Development Systems Inc.)
United States Patent 3 858 499 (1975) [En]

In a food concn. process, bags (with a semi-permeable membrane wall) containing a liquid food are passed by conveyor through a dialysing salt bath to bring about dehydration. Particular application is to coffee and orange juice. IFT

73

Coffee statistics. U.S. Jan-December imports.
United States of America, US Department of Commerce
Tea and Coffee Trade Journal **147** (3) 57 (1975) [En]

Data are given on US imports of green coffee during 1973 and 1974. Totals, tabulated by continent and country of origin, were (60 kg bags) 19 242 556 and 21 788 620. RM

74

[Filter pack.] Filterpackung.
Bednartz, H.
German Federal Republic Patent Application
2 327 264 (1975) [De]

A filter bag for preparing a coffee infusion has the coffee enclosed in a separate sealed container, preferably of Al foil. In use, the sealed container is opened, the bottom is pierced, and hot water is poured directly onto the coffee. Separate packaging of the coffee prevents blockage of the filter paper pores and heat loss due to the water having to first pass through the filter paper. W&Co

75

[Infusion bag for foods.] Aufgussbeutel für Nahrungs- und Genussmittel.
Sudbrock, A.
German Federal Republic Patent Application
2 323 052 (1974) [De]

A coffee extract, which is always freshly-filtered and pure, is obtained by use of a coffee bag, made from filter paper, which is enclosed in an easily removable barrier layer which prevents air from gaining access to the ground coffee. The filter bag and barrier layer are enclosed in an air-tight metal foil pack. W&Co

76

Research for coffee production is a round-the-calendar process at Probat Werke factory and laboratory.
Probat-Werke von Gimborn & Co. KG
Tea and Coffee Trade Journal **147** (1) 44-46 (1975) [En]

A newly developed coffee processing method (the Radial-Turbo-Roaster) is described with the aid of diagrams. The roasting process uses a centrifugal and turbine system which is constantly monitored by a pneumatically actuated remote sampler. Special features are: gentle mixing and agitation of the beans, achieving intensive heat transfer; short roasting time (4-6 min); low heating costs; short discharge periods; compact construction; automatic control; easy maintenance; central ventilation, preventing draught phenomena in the roasting area; and partial recirculation of the exhaust gases. The machine can be used for roasting coffee and cocoa beans, and hazelnuts. RM

77

"Swepco" sealing compounds for coffee tanks.
Kamau, I. N.
Kenya Coffee **39** (458) 148-150 (1974) [2 ref. En] [Coffee Res. Sta., Ruiru, Kenya]

"Swepco" and "Leruch" sealing and coating compounds were tested in coffee fermentation tanks. Liquoring results of coffee from treated tanks, in conjunction with weathering tests, showed that "Swepco" sealing and coating compounds caused no off flavour and were superior to "Leruch" in reducing corrosion and peeling. No leaks were observed at any time after their application. RM

78

Warehouse design for durable produce in the non-humid tropics with particular reference to coffee storage in Kenya.
Stirling, H. G.
Kenya Coffee **39** (465) 353-365 (1974) [10 ref. En]

Examination of traditional tropical warehouse design suggested that conventional, naturally-ventilated warehouses did not improve internal storage environment. Improvements tested by means of scale models included a double skin of reflective material with a freely ventilated air space between the 2 layers, generous roof overhang, painting of all external surface receiving direct sunlight in glossy white, and control of incoming air by means of fans and automatic switchgear. The total cost of these modifications was ~10% of total cost of construction. The principles, formulated in relation to stored bagged coffee, will be tried on a full-scale warehouse. RM

79

[Application of a cold grinding process to coffee beans.] Anwendung eines Verfahrens zur Kaltzerkleinerung auf das Mahlen von Kaffeebohnen.
Oberpriller, J. (Linde AG)
German Federal Republic Patent Application 2 334 718 (1975) [De]

A process of cold grinding, which is useful for products which become plastic with increasing temp., is applied to the grinding of coffee. The coffee, preferably roughly ground first, is carried by a gas stream through the grinder, cooling being effected by a second countercurrent gas. Grinding preferably takes place at 150-190°K. This process preserves easily volatile fractions, and productivity is increased. W&Co

80

[The structure of mascaroside, a diterpenic heteroside of Coffea viannevi Leroy.]
Ducrouix, A.; Hamonniere, M.; Pascard, C.; Poisson, J.
Cafe-Cacao-The **19** (1) 57-58 (1975) [7 ref. Fr] [Inst. de Chimie des Substances Naturelles du CNRS, 91190 Gif-sur-Yvette, France]

The structure of mascaroside, a heteroside isolated from the grains of a Malagassi Coffee (var. Coffea viannevi Leroy) was established by chemical, spectroscopic and X-ray crystallographic methods to be a β-glucoside closely related to cafestol II previously isolated from the unsaponifiable fraction of C. arabica, and with similar spectral characteristics to cafamarine, isolated from C. buxifolia Leroy. RM

81

A breakthrough in green coffee drying.
Sivetz, M.
Tea and Coffee Trade Journal **147** (2) 34-35 (1975) [En]

A series of parchment drying tests were carried out on fluidized coffee beans on the Kona coast of Hawaii. Only 2-4 h drying time was required (vs. 18-20 h commercially) to dry from 52 to 12% bean moisture content, using inlet air temp. of 160-260°F and bean temp. of 120-190°F with 4 lb batches of parchment beans in continual movement. The resulting dried, hulled and roasted beans were substantially indistinguishable in aroma and taste from commercially processed beans, and had negligible parchment damage. Bean temp. control used no more power and fuel than the commercial process. RM

82

Effects of caffeine on the human system.
Burg, A. W.
Tea and Coffee Trade Journal **147** (1) 40-42, 88 (1975) [26 ref. En] [Arthur D. Little Inc., Cambridge, Massachusetts, USA]

Published data on concn. of caffeine and other methylxanthines (theobromine, theophylline) in coffee, tea, cocoa and cola drinks are critically reviewed. New data obtained from 29 coffee, 13 tea and 2 cocoa products (2223 individual values) are given and include: caffeine contents (mg/cup): R & G coffee (percolator) range 64-124 (average 83), R & G decaffeinated 2-5 (3); instant 40-108 (59); instant decaffeinated 2-8 (3); bagged tea, no range given (42); leaf tea 30-48 (41); and instant tea 24-31 (28). Methylxanthine concn. (caffeine, theobromine and theophylline, respectively) were (mg/cup): instant tea -, 2.4, -; black leaf tea 42, 2.2, <0.3; African cocoa 6, 272, -; and south American cocoa 42, 232, -. Standard average caffeine contents/cup suggested are 85 mg for roast and ground coffee, 60 mg for instant coffee, 3 mg for decaffeinated coffee and 30 mg for instant tea. RM

83

Protecting the environment is a challenge the coffee roaster can not afford to ignore now or ever.
Maschinenfabrik Ferd. Gothof GmbH
Tea and Coffee Trade Journal **147** (1) 47-49, 84, 90, 94 (1975) [En] [Mulheim-Ruhr, Federal Republic of Germany]

A newly developed coffee roaster based on the Rapido Nova Series is described with the aid of diagrams. It operates with a modified air circulation system in which exhaust gases, after first passing through a heat exchanger, are led back into the burner chamber where roasting residues are burnt at a temp. independent of the roasting gas temp. Independent temp. control of roasting gas and burner chamber temp. allows optimum roasting and exhaust gas cleaning. Energy requirement is cut to 22% of thermal after burning at 450°C or 15% of 2-stage after burning at 600° and 750°C. Total energy consumption for roasting and exhaust gas cleaning by the air recirculation system with a 2-stage burner at 600° and 700°-800°C is 54 000-56 600 kcal/100 kg raw coffee. RM

84

A study tour of coffee producing countries. I. Brazil. II. Colombia. III. Costa Rica. IV. El Salvador. V. Guatemala. VI. Jamaica. VII. Malawi. VIII. Conclusions.
Mitchell, H. W.
Kenya Coffee **39** (454-455) 24-32; (457) 108-115; (458) 140-147; (459) 164-169; (460) 194-201; (461) 233-236; (463) 283-291 (1974) [many ref. En] [Coffee Res. Sta., Ruiru, Kenya]

Cultural and processing methods in important coffee growing countries and quality of the coffee liquor, studied during a tour in 1973, are discussed. Differences methods and coffee quality are discussed in the final article. RM

85

[Influence of heating conditions on the elimination of water from coffee extracts during freeze-drying.]
Colombo, A. J.; Aquarone, E.; Baruffaldi, R.
Cafe-Cacao-The **19** (1) 45-56 (1975) [10 ref. Fr, de, en, es] [Dept. de Tech. Biochimico-Pharmaceutique, Fac. des Sci. Pharmaceutiques, Univ. de Sao Paulo, Brazil]

The influence of heating conditions on the temp.

and loss of water during freeze-drying of coffee was studied, using industrial extracts, provided by a specialized factory and kept under refrigeration at 0-1°C, and a filtered extract, produced from roasted coffee immediately after grinding. The extracts were freeze-dried at 8°, 12° and 16°Brix and at 30°, 60° and 90°C final temp. Temp. of heating plates and water losses during the process are shown graphically and in tables. Final temp. was reached in 14 h for 30°C, 12h for 60°C and 11h for 90°C. Most of the water was lost during the first hours of drying; about 50% was eliminated during the first 4 h, irrespective of the final temp. or concn. of the extracts. RM

86

Further experiments on the factors affecting quality loss in stored Arabian coffee.
Stirling, H. G.
Kenya Coffee **40** (466) 28-35 (1975) [11 ref. En]

The effects of storing parchment, pre-hulled and clean (hulled and polished) coffee, with a moisture content of 10.4%, at 10°, 17°, 25°, 30° and35°C under sealed or ventilated conditions (RH 60%) for 12 months were studied. Rates of quality loss, determined monthly by standard quality assessment (raw appearance, roast appearance, cup quality), are shown graphically and in tabular form. Main quality characteristics were maintained for 12 months at ≤17°C under dry, cool, ventilated conditions, especially in parchment coffee which developed only negligible woodiness. Pre-hulled and clean coffee also retained a high level of quality under these conditions, but removal of parchment and silver-skins increased the likelihood of woody off-flavours.
RM

87

[Process for producing coffee roasts and extracts which are low in stimulating substances.]
Verfahren zur Herstellung von röstreizstoffarmen Röst und Extraktkaffee.
Mohr, E. **(Germany, Federal Republic of,** Inge Institut für Genussmittelforschung GmbH)
German Federal Republic Patent Application 2 337 201 (1975) [De]

Undesirable stimulating substances, e.g. pyridine, pyridine derivatives, furfural and phenols, are removed from roasted coffee with solvents which do not affect the basic flavouring substances. An organic solvent is used with a bp <20°C; it is removed after decanting by distillation under vacuum at 20-80°C. The roasted coffee is sprayed with water or steam during distillation and undergoes subsequent heating at <150°C. Extraction is preferably carried out at a temp. of -40°C to +5°C, and the solvent may be separated from the extracts by distillation. The extracts (containing the flavouring substances) are then separated from the stimulating substances by molecular sieving or chromatography, and sprayed onto the roasted coffee or extract. W&Co

88

Carbofuran; tolerances for residues.
United States of America, Environmental Protection Agency
Federal Register **40** (60, March 27) 13500 (1975) [En] [Washington, DC, USA]

A tolerance of 0.1 ppm in or on coffee beans is established under the Federal Food, Drug, and Cosmetic Act for negligible residues of the title insecticide [2,3-dihydro-2,2-dimethyl-7-benzofuranyl-N-methylcarbamate]; its carbamate metabolite 2,3-dihydro-2,2-dimethyl-3-hydroxy-7-benzofuranyl-N-methylcarbamate; and its phenolic metabolites 2,3-dihydro-2,2-dimethyl-7-benzofuranol and 2,3-dihydro-2,2-dimethyl-3-oxo-7-benzofuranol, and 2,3-dihydro-2,2-dimethyl-3,7-benzofuranadiol. CAS

89

Lyophilisation process in atmosphere of condensable gas.
Rey, L.; Bouldoires, J.-P.; Roviro, D. (Societe d'Assistance Technique pour Produits Nestle SA)
United States Patent 3 873 745 (1975) [En]

A process for the separation of a solvent from a substance in solution or in suspension employs lyophilization in an atm. of condensable gas. The process can be used for production of tea and coffee extracts. IFT

90

Coffee aromatization.
Mahlmann, J. P. (General Foods Corp.)
United States Patent 3 873 746 (1975) [En]

Soluble coffee is aromatized by incorporation of a synthetic coffee aroma composition produced by reacting methyl mercaptan with a molar excess of carbonyl compounds. IFT

91

Freeze concentration of aqueous solutions.
Anon.
South African Food Review **1** (5) 35 (1974) [En]

Extraction of liquid concentrates during processing of fruit juices, wine and coffee often results in a deterioration of appearance and loss of aroma. The Grenco freeze-concentration process includes 2 separate crystallization zones: the heat exchange nucleation zone, and a recrystallizer growth zone. The separation section consists of a vertical cylindrical wash column. This wash column enables the separation of ice crystals and concentrates with no loss of volatile aromas or dissolved solids, and there is no thermal degradation. GL

92

Enzyme treatment reduces extract drying cost.
Masters, K.; Stoltze, A.
Food Engineering 46 (11) 73-75 (1974) [5 ref. En] [A/S Niro Atomizer, Copenhagen, Denmark]

A method is described, with the aid of photographs and a flow diagram, for producing extracts from grain (barley, maize, oats, rye) and root crops (chicory, sugarbeet). The extracts form the basis of non-stimulant substitutes for coffee. The process involves the following stages: pretreatment of grains and dried or sliced root crops (i.e. cleaning, and, for grains, size classification and malting); roasting, blending and, possibly, granulation; extraction, which involves wetting, soluble extraction and solubles formation by hydrolysis; increasing extract solids content from 20-30% to 40-50% by treatment with enzymes for 4-5 h, followed by heating to destroy enzyme activity; filtration, cooling and spraying with gas; spray drying (inlet temp. 240-280°C, outlet temp. 100-110°C); cooling of the powder; and packaging in air-tight containers or hot-sealed disposable packs.

93

JA

[Caffeine content of coffee products.]
Vol'per, I. N.; Solov'eva, T. Ya.
Voprosy Pitaniya No. 3, 77-78 (1975) [5 ref. Ru] [Kafedra Tovarovedeniya Prodovol'stvennykh Tovarov, Leningradskii Inst. Sovetskoi Torgovli, Leningrad, USSR]

Robusta coffees from Guinea, Uganda and Ivory Coast were found to contain respectively 2.1, 2.2 and 2.35% caffeine. The caffeine content in 4 instant coffee samples from Moscow, Leningrad, Odessa and Brazil ranged from 4.5 to 5.1%. For 5 samples of instant coffee of different (unstated) origin, values by the Soviet Standard (GOST) chemical method and by a spectrophotometric method (absorption at 250-290 nm) considered simpler and more rapid were respectively (%): 3.1 and 3.2, 4.0 and 4.5, 4.3 and 4.5, 3.8 and 3.4, and 4.4 and 5.0. It is considered that **Soviet Standard GOST 5.863-71** [see FSTA (1972) 4 5U228] should be amended to include an upper limit for caffeine content of instant coffee and thus exclude samples of excessive richness; and that for the same reason use for instant coffee manufacture of Robusta coffees (said to yield instant coffees with ≤7.7% caffeine) should be restricted. SKK

94

Cycloalkapyrazines in coffee aroma.
Vitzthum, O. G.; Werkhoff, P.
Journal of Agricultural and Food Chemistry 23 (3) 510-516 (1975) [21 ref. En] [HAG AG, Res. Dept., 28 Bremen, Federal Republic of Germany]

The volatile components of roasted coffee were separated into basic and neutral components and analysed on a 185 m × 0.31 mm inner diam. glass capillary column coupled to a mass spectrometer. 17 alkylated 5- and 6-membered alicyclic pyrazines are reported for the first time in roasted coffee. The identities of bicyclic pyrazines were confirmed by direct comparison of their mass spectral and gas chromatographic retention data with those of authentic samples and with spectra given in the literature. Possible precursors of the bicyclic pyrazine compounds are discussed. The principal mass spectrometric fragmentation pathways of cyclopentapyrazines and tetrahydroquinoxalines are demonstrated.

AS

95

A study of selected parameters affecting the radiation dose from radionuclides in drinking water downstream of the Hanford project.
Denham, D. H.; Soldat, J. K.
Health Physics 28 (2) 139-144 (1975) [2 ref. En] [Battelle Pacific Northwest Lab., Richland, Washington 99352, USA]

Studies on the potential radiation dose from drinking water at 2 cities (Richland and Pasco) downstream of the Hanford nuclear reactor installation, Washington, USA are described. Removal of radioactive isotopes from the water in the water treatment plants of the 2 cities ranged from 10% (for ^{51}Cr) to 80% (for rare-earth nuclides). Samples of tap water were collected at distances of 0.6-3.7 miles from the Richland water treatment plant; total β-activity and concn. of individual radioelements were determined. Tables of results are given showing that radioactivity decreases considerably with increasing distance from the treatment plant (as a result of the short half-life of main isotopes present). The contribution of drinking water to the total radiation dose to the bone, gastrointestinal tract and whole body of adults and the thyroid gland of infants was studied; it is concluded that drinking water is the primary source of radiation exposure of the adult gastrointestinal tract and the infant thyroid gland. Studies were also conducted on removal of radioelements during the brewing of coffee. A decrease of total β-activity of ≤80% was observed; however, the short-lived isotopes responsible for most of the gastrointestinal tract radiation dose were not removed. AJDW

96

[Coffee roasting trials with imported and Brazilian roasting equipment.]
Quast, D. G.; Okada, M.; Yokomizo, Y.; Lima, J. E.
Boletim do Instituto de Tecnologia de Alimentos, Brazil No. 40, 49-81 (1974) [6 ref. Pt, en]

Details are given of comparative studies on 5 coffee roasters: 2 Brazilian roasters (capacities 300 and 480 kg), and 3 imported roasters (a 10 kg capacity pilot scale roaster, a 300 kg capacity roaster, and a continuous roaster of 3000 kg/h capacity). Characteristics studied were the DM loss during roasting, the colour and caffeine and soluble solids contents of the roasted coffee, variation in temp. during roasting, and energy consumption. Tables and graphs of results are given. The results show that the characteristics of coffee samples roasted in the various driers differed significantly. Generally, losses of soluble solids and caffeine increased with increasing roasting time. To achieve the required quality of the roasted coffee, roasting temp. should reach at least 210°C. AJDW

97

Coffee decaffeination.
Vitzthum, O.; Hubert, P. (Hag AG)
United States Patent 3 879 569 (1975) [En]

Raw coffee is moistened to a moisture content of 10-60%, after which is extracted with liquid CO_2 under conditions such that the CO_2 is maintained in a liquid state and below 31.4°C prior to recovery of the caffeine. IFT

98

Some recent advances in agglomerating, instantizing and spray drying. [Lecture]
Jensen, J. D.
Food Technology **29** (6) 60, 62, 64-65, 68, 70-71 (1975) [19 ref. En] [A/S Niro Atomizer, 305, Gladsaxevej, DK-2860 Soeborg, Denmark]

This article discusses rewet and straight-through processes and equipment for afflomerating, instantizing, and spray drying of such products as coffee and whole milk powder. Some of the newer techniques described include the steam-swept-wheel process, the 2-stage drying process, and a combination spray dryer-fluidized bed. IFT

99

[From raw coffee to roasted coffee. III. Modern roasting accessories.] Vom Rohkaffee zum Röstkaffee. III. Neuzeitliches Röstereizubehör.
Schabbel, R.
Kaffee und Tee Markt **25** (6) 9-11, 14-15 (1975) [De] [Probat-Werke, Emmerich, Federal Republic of Germany]

This article containing many illustrations deals with equipment for stone removal, automatic gravimetric control of degree of roasting, automatic mixing of different kinds of roasted coffee, conveyors, grinding equipment, and equipment for removal of waste products (skin combusion, or grinding and pelleting). It deals also with works-laboratory equipment (sample roaster, moisture tester, testing table, sieve, and apparatus for bulk density determination). [See FSTA (1975) 7 8H1225 for part II.] SKK

100

[From raw coffee to roasted coffee. IV. Computers for automatic process control.] Vom Rohkaffee zum Röstkaffee. IV. Der Prozessrechner - Ein Steuerungssystem.
Wulfmeyer, H.
Kaffee und Tee Markt **25** (7) 24-27 (1975) [De] [Probat-Werke, Emmerich, Federal Republic of Germany]

The Probat-Progress System for computerized control of coffee roasting installations is described and the programming is outlined. SKK

101

[Roasted coffee with 'Mocha' description.] Über Röstkaffee mit der Bezeichnung 'Mokka'.
Wurziger, J.
Kaffee und Tee Markt **25** (7) 4-6 (1975) [1 ref. De] [Chem. und Lebensmitteluntersuchungsanstalt, Hygienisches Inst., Hamburg, Federal Republic of Germany]

The complicated Federal German legal and trade aspects of the 'Mocha' description of roasted coffees are discussed. From being originally a coffee type description relating to the Ethiopian variety of Arabica coffee, it has also gradually acquired a quality connotation indicating strong aromatic roasts, and inclusion of Robusta coffees in roasted coffees designated as 'Mocha' has become usual. The 1955 decision of a Hamburg Court that 'Mocha' denotes a particularly strong coffee has recently been contradicted by the opinion of a court of lay assessors in West Berlin that roasted coffee not consisting mostly of Ethiopian beans should not be described as 'Mocha'. Examination of 20 commercial samples of 'Mocha' coffee showed that 13 consisted exclusively of Arabica coffee and 7 contained 6-60% Robusta coffee. The author considers that blends containing >10% Robusta coffee do not comply with the present definition of the term 'Mocha'. SKK

102

Coffee brewing bag and method.
Einstman, W. J.; Rehman, W. C.; Plant, F. M. (General Foods Corp.)
United States Patent 3 879 565 (1975) [En]

Ground roasted coffee is sprayed with an aqueous emulsion of dimethyl-polysiloxane prior to packaging in filter paper infusion bags. Use of a bag vol. approx. twice that of the coffee eliminates the need for a defoaming agent. IFT

103

Methylxanthine consumption from coffee and tea.
Al-Samarrae, W.; Ma, M. C. F.; Truswell, A. S.
Proceedings of the Nutrition Society **34** (1) 18A-19A (1975) [4 ref. En] [Dept. of Nutr., Queen Elizabeth Coll., London W8 7AH, UK]

104

The composition of green and roasted coffee beans. [Review]
Clifford, M. N.
Process Biochemistry **10** (2) 20-23, 29; (4) 13-16, 19 (1975) [137 ref. En] [Dept. of Sci. & Food Tech., Grimsby Coll. of Tech., Grimsby, UK]

105

Traces of chlorinated solvent in coffee samples determined by ion selective membrane electrodes.
Mascini, M.; Lucci, A.; Ferramondo, A.
Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene **65** (2) 221-228 (1974) [5 ref. En, fr] [Istituto di Chimica Analitica, Univ. di Roma, Rome, Italy]

Detn. of residues of chlorinated solvent in decaffeinated coffee, using a chlorine specific ion electrode, was evaluated. The procedure involved decomposition of volatile compounds from the coffee at high temp. (900-1000°C), absorption into alkaline arsenite, and direct potentiometric detn. of the chloride. Results showed the procedure to be faster and more precise than the conventional potentiometric titration with silver ion, and is recommended for routine work. PG

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